

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-37 (Cancelled)

38.(Currently Amended) A copolymer comprising (a) one or more pendant group segments and (b) one or more polyol segments, each of said segments being linked to one or more further segments which may be the same or different,

wherein said one or more pendant group segments are the same or different and are ~~selected from~~ (i) siloxane segments, wherein each of said siloxane segments comprises a siloxane moiety which is either a linear siloxane with a molecular weight of up to 2000 Daltons, a silsesquioxane cage or a partial silsesquioxane cage, said moiety being attached to the copolymer backbone either directly or via a pendant arm that does not contain any ether groups, and wherein when said moiety is a silsesquioxane cage or partial silsesquioxane cage, then the copolymer comprises more polyol segments than pendant group segments.

~~(ii) — segments containing phosphoryl choline or a derivative or analogue thereof;~~

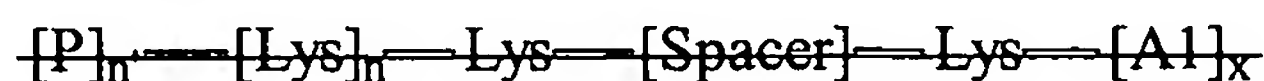
~~(iii) — segments containing a di- or trifluoromethyl group;~~

~~(iv) — heparin-like segments containing a group of formula (XII)~~



~~wherein D is an aliphatic or aromatic group and Ar—SO₃⁻ comprises one or more linked aryl and/or heteroaryl groups, at least one of the aryl and/or heteroaryl groups having an SO₃⁻ substituent; and~~

~~(iv) — segments containing a group of formula (I)~~



(I)

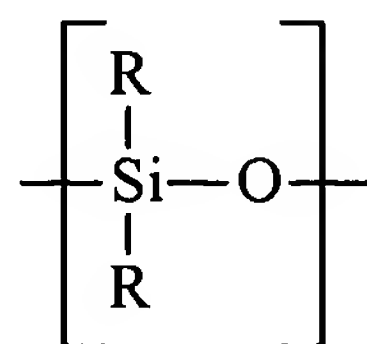
wherein:

~~[A1] is an inert amino acid;~~
~~x is 0, 1, 2 or 3;~~
~~[Spacer] is a fatty acid, amino acid, peptide or PEG;~~
~~[P]_n-[Lys]_n is a dendritic structure formed from n lysine groups and n' groups P;~~
~~n is an integer of from 1 to 15;~~
~~n' is zero or an integer of up to 16; and~~
~~each P is the same or different and is an amino acid or a peptide having up to 25 amino acids,~~
~~and wherein at least a part of each of said pendant group segment(s) is on a side chain of the copolymer.~~

39. (Previously Presented) A copolymer according to claim 38, wherein the segments are linked via urea or urethane linkages.

40. (Cancelled)

41. (Currently Amended) A copolymer according to claim 38, wherein the pendant siloxane segment(s) comprise a linear siloxane moiety, said linear siloxane moiety comprising repeating units of the formula (II)

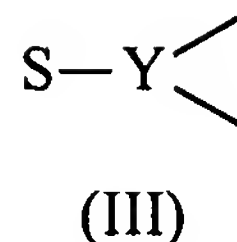


(II)

wherein each R is the same or different and represents an aliphatic or aromatic group.

42. (Previously Presented) A copolymer according to claim 41, wherein each R is the same or different and represents an alkyl, alkenyl, alkynyl, cycloalkyl or aryl group.

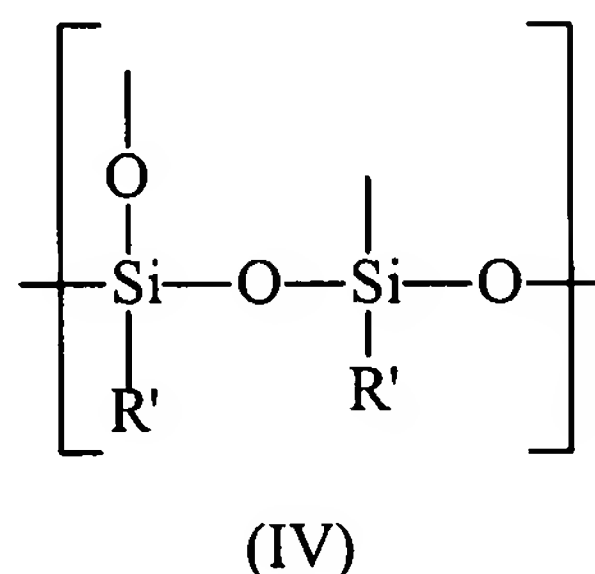
43. (Previously Presented) A copolymer according to claim 74, wherein the pendant siloxane segment(s) have the structure (III)



wherein S is a linear siloxane group, a silsesquioxane cage or a partial silsesquioxane cage and Y is an aliphatic group which is bonded to at least two urea or urethane linkages.

44. (Previously Presented) A copolymer according to claim 43, wherein S is a silsesquioxane cage.

45. (Previously Presented) A copolymer according to claim 44, wherein the silsesquioxane cage S consists of repeating units of formula (IV)



wherein each R' is the same or different and represents an aliphatic or aromatic group and wherein one R' group is replaced with a bond attached to group Y.

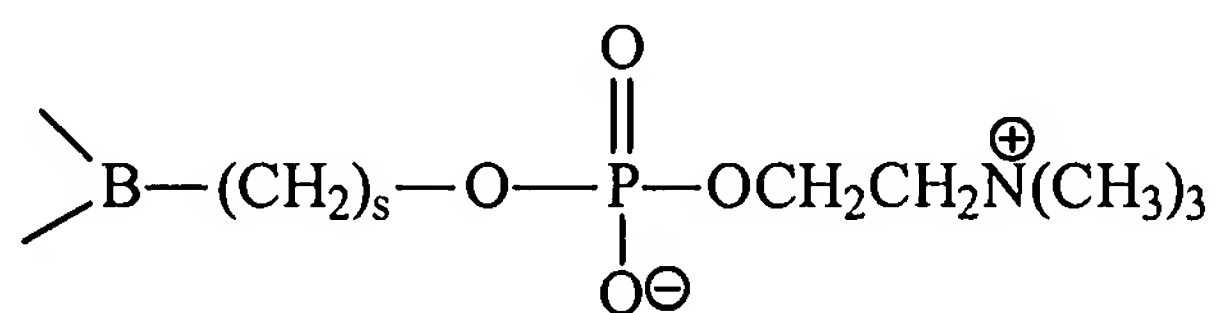
46. (Previously Presented) A copolymer according to claim 45, wherein each R' is the same or different and represents an alkyl, alkenyl, alkynyl, cycloalkyl or aryl group.

47. (Previously Presented) A copolymer according to claim 38 which comprises one or more pendant siloxane segments, and wherein the ratio of siloxane segment(s) to polyol segment(s) is 1:10 or less.

48. (Previously Presented) A copolymer according to claim 38, which comprises one or more pendant siloxane segments having a molecular weight of up to 5000.

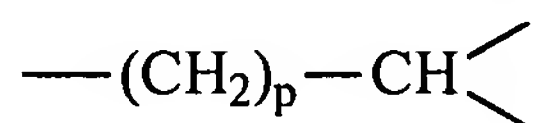
49. (Previously Presented) A copolymer according to claim 38, which comprises two or more different pendant siloxane segments, each containing a silsesquioxane cage or partial cage.

50. (Currently Amended) A copolymer according to claim ~~[[38]]~~ 77, wherein the segment(s) containing phosphoryl choline or a derivative thereof have the formula (V)

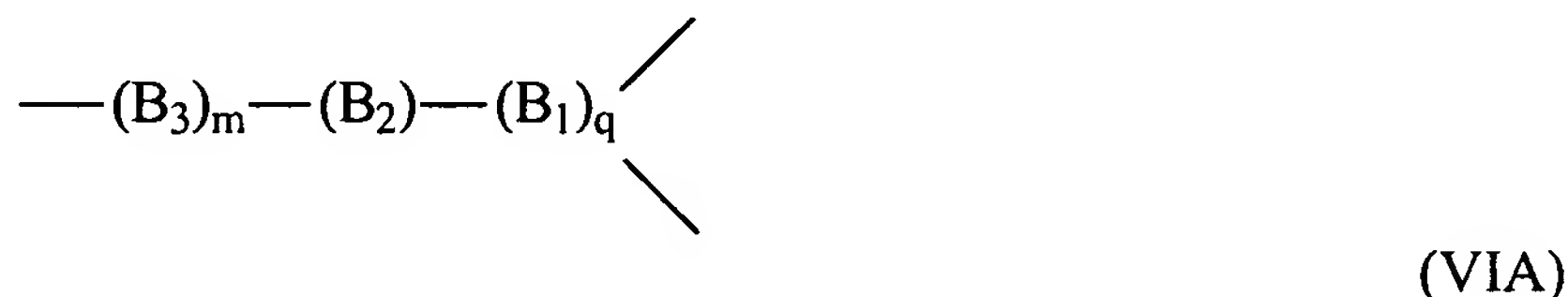
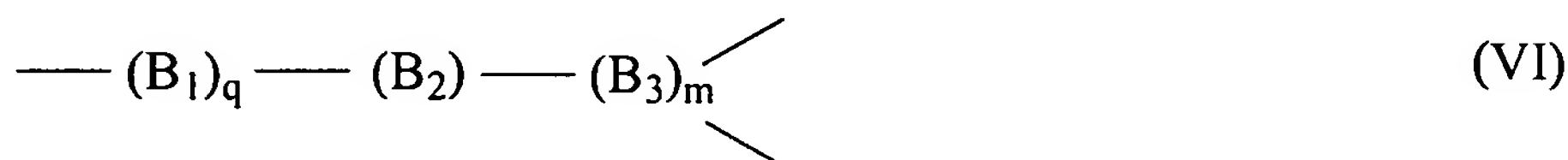


(V)

wherein s is 0, 1, 2, 3 or 4 and B is an aliphatic group of formula

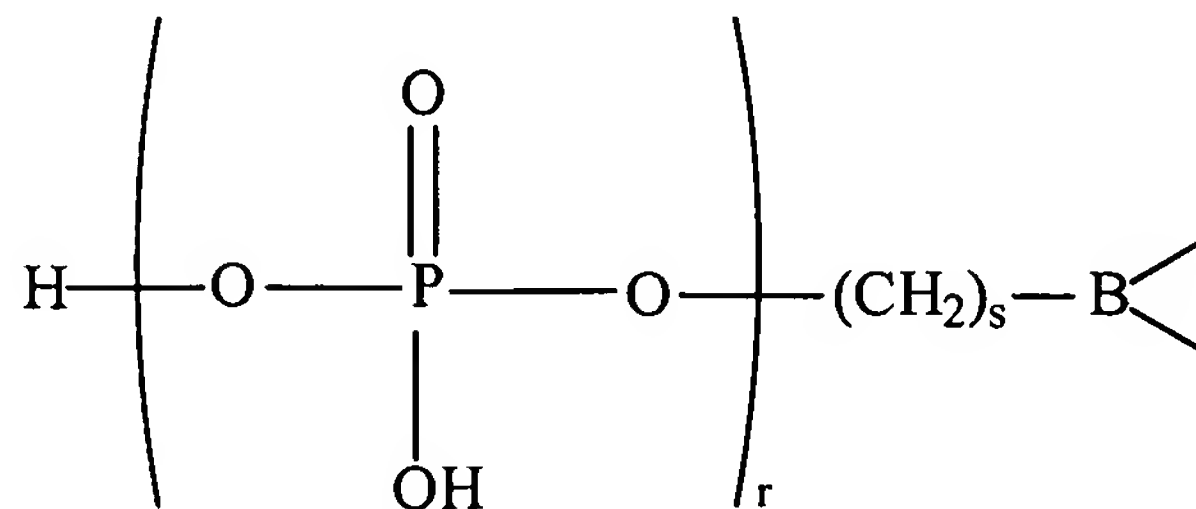


wherein p is an integer of from 0 to 8, or B is a group of formula (VI) or (VIA)



wherein each B₁ is the same or different and is a C₆-C₁₀ aryl, a C₁-C₈ alkylene, C₂-C₈ alkenylene, C₃-C₆ cycloalkyl group or a 5- or 6- membered heterocyclyl group containing 1, 2 or 3 heteroatoms selected from nitrogen, oxygen and sulfur; B₂ is a 5- to 10-membered heterocyclyl or heteroaryl group containing from 1 to 5 heteroatoms selected from nitrogen, oxygen and sulfur; B₃ is an aliphatic group; q is 0, 1, 2 or 3; and m is 0 or 1.

51. (Currently Amended) A copolymer according to claim ~~[[38]]77~~, wherein the segment(s) containing an analogue of phosphoryl choline have the formula (VII)



(VII)

wherein s and B are as defined in claim 50 and r is 1, 2, 3, 4 or 5, and wherein the one or more phosphate groups are, independently optionally present in the form of a salt.

52. (Currently Amended) A copolymer according to claim ~~[[38]]77~~, wherein the segment(s) containing a di- or trifluoromethyl group are straight or branched, C₂₋₁₂ alkylene groups which are substituted with one or more di- or trifluoromethyl groups and optionally one or more fluorine atoms.

53. (Currently Amended) A copolymer according to claim ~~[[38]]77~~, wherein the segments(s) containing a di- or trifluoromethyl group are siloxane segments, segments containing phosphoryl choline or a derivative or analogue thereof, heparin-like segments or segments of formula (I) which are substituted with a di- or trifluoromethyl group.

54. (Currently Amended) A copolymer according to claim ~~[[38]]77~~, wherein in the group of formula (XII) Ar comprises one or two linked aryl or heteroaryl groups selected from phenyl and pyrazolyl, Ar being substituted with one or two -SO₃⁻ groups and one, two or three further substituents selected from methyl, ethyl, methoxy, methylthio, nitro and dimethylamino groups; and D is a group D¹-D²-D³- wherein D¹ is an aryl or heteroaryl group which is unsubstituted or substituted with one, two or three substituents selected from methyl, ethyl and methoxy groups, D² is -NR'CO-, -CONR', -OCO-, -COO-, -NR'SO₂- or -SO₂NR'- and D³ is phenyl or a C₁₋₄

alkylene or C₂₋₄ alkenylene group which is unsubstituted or substituted with one, two or three substituents selected from methyl, ethyl and methoxy groups.

55. (Currently Amended) A copolymer according to claim ~~[[38]]~~77, wherein the group of formula (XII) is a derivative of an Acid Yellow compound.

56. (Currently Amended) A copolymer according to claim ~~[[38]]~~77, wherein in the group of formula (I), n is 7.

57. (Currently Amended) A copolymer according to claim ~~[[38]]~~77, wherein in the group of formula (I), P is an amino acid or peptide in the D-form.

58. (Previously Presented) A copolymer according to claim 38 which comprises two or more different pendant group segments.

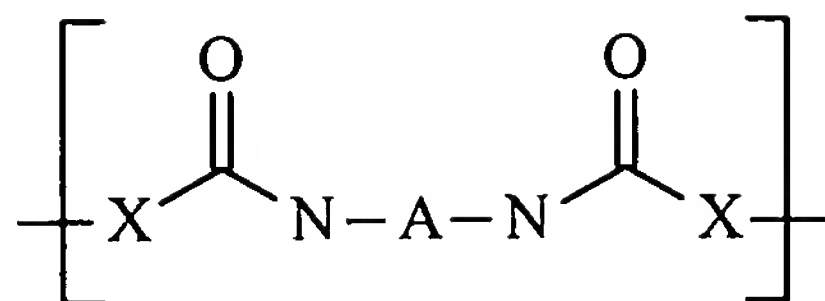
59. (Previously Presented) A copolymer according to claim 38, further comprising (c) one or more chain extender segments, each of said chain extender segments being linked to one or more further segments, which may be the same or different.

60. (Previously Presented) A copolymer according to claim 59, wherein said chain extender segment(s) are selected from amino acids, peptides, polypeptides and C₁-C₆ aliphatic moieties.

61. (Previously Presented) A copolymer according to claim 60, wherein one or more of said chain extender segment(s) is an anticoagulant.

62. (Previously Presented) A copolymer according to claim 60, wherein one or more of said chain extender segment(s) is RGD (Arg-Gly-Asp).

63. (Previously Presented) A copolymer according to claim 38, wherein each segment is linked to one or more further segments by a group of formula



wherein each X is the same or different and is a nitrogen or oxygen atom and each A is the same or different and is an aromatic or aliphatic moiety.

64. (Previously Presented) A copolymer according to claim 38, which comprises as component (b) one or more polycarbonate segment(s).

65. (Currently Amended) A process for producing a copolymer according to claim 39, ~~[[which]]~~ wherein said process comprises polymerising, in any order, polymerising, in any order,

(i) one or more pendant group siloxane segments, wherein each of said siloxane segments comprises a siloxane moiety which is either a linear siloxane with a molecular weight of up to 2000 Daltons, a silsesquioxane cage or a partial silsesquioxane cage, said moiety being attached to the copolymer backbone either directly or via a pendant arm that does not contain any ether groups, and wherein when said moiety is a silsesquioxane cage or partial silsesquioxane cage, then the copolymer comprises more polyol segments than pendant group segments, and wherein each of said one or more segments is the or each segment being bonded to at least one group selected from primary or secondary amine, hydroxyl and carboxylic acid groups;

(ii) a polyol;

(iii) an aromatic compound having two or more isocyanate groups; and optionally

(iv) one or more chain extenders selected from amino acids, peptides, polypeptides and C₁-C₆ aliphatic groups, each of which has at least one substituent selected from primary or secondary amine, hydroxyl and carboxylic acid groups.

66. (Currently Amended) A process for producing a copolymer according to claim 39, said copolymer comprising ~~as the pendant group segment~~ a linear siloxane attached directly to the backbone of the copolymer,

~~[[which]]~~ wherein said process comprises (i) reacting a polyol polyurethane with a strong base, and (ii) reacting the product of (i) with a siloxane.

67. (Currently Amended) A copolymer obtained ~~or obtainable~~ by the process of claim 65.

68. (Currently Amended) A process for producing a lined copolymer, ~~[[which]]~~ wherein said process comprises seeding cells onto the surface of a copolymer as claimed in claim 38.

69. (Currently Amended) A lined copolymer obtained ~~or obtainable~~ by the process of claim 68.

70. (Previously Presented) A moulded article comprising a copolymer as claimed in claim 38 or a lined copolymer as described above.

71. (Previously Presented) A moulded article according to claim 70 which is an implantable device.

72. (Previously Presented) An implantable device according to claim 71 which is a vascular graft.

73. (Previously Presented) A method of treating a human or animal patient in need of the replacement of a body part, said method comprising replacing said body part with the implantable device of claim 71.

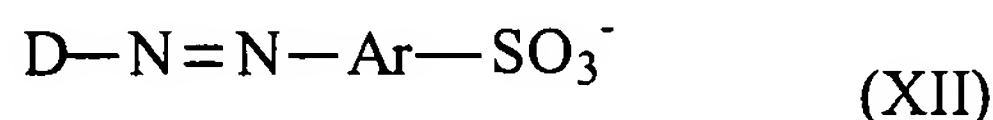
74. (Currently amended) A copolymer according to claim ~~[[40]]~~38 wherein the siloxane group is attached to the polymer via a pendant arm.

75. (Previously Presented) A copolymer according to claim 74 wherein the pendant arm is attached at the end of the copolymer chain.

76. (Previously Presented) A copolymer according to claim 47 wherein the ratio of pendant siloxane segment : polyol segment is 1:25 or less.

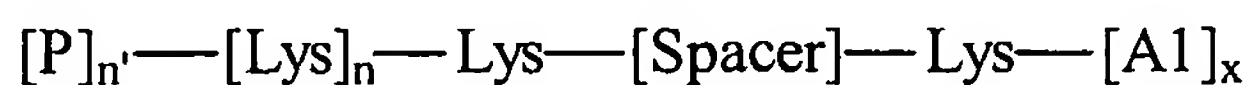
77. (New) A copolymer according to claim 38, which comprises one or more further pendant group segments which may be the same or different and are selected from:

- (1) segments containing phosphoryl choline or a derivative or analogue thereof;
- (2) segments containing a di- or trifluoromethyl group;
- (3) heparin-like segments containing a group of formula (XII)



wherein D is an aliphatic or aromatic group and Ar-SO₃⁻ comprises one or more linked aryl and/or heteroaryl groups, at least one of the aryl and/or heteroaryl groups having an SO₃⁻ substituent; and

- (4) segments containing a group of formula (I)



(I)

wherein:

- [A1] is an inert amino acid;
- x is 0, 1, 2 or 3;
- [Spacer] is a fatty acid, amino acid, peptide or PEG;
- [P]_{n'}-[Lys]_n is a dendritic structure formed from n lysine groups and n' groups P;
- n is an integer of from 1 to 15;
- n' is zero or an integer of up to 16; and

- each P is the same or different and is an amino acid or a peptide having up to 25 amino acids,
and wherein at least a part of each of said pendant group segment(s) is on a side chain of the copolymer.